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EXAMINER

MISLEH, JUSTIN P

ART UNIT PAPER NUMBER

2612

DATE MAILED: 11/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/814,634

Applicant(s)

KATOH ET AL.

Examiner

Justin P. Misleh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 - 5, 7 - 26, and 28 - 44 is/are pending in the application.
- 4a) Of the above claim(s) 12 - 21 and 33 - 42 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22 and 28 - 31 is/are allowed.
- 6) ☒ Claim(s) 1 - 5, 7 - 10, and 43 and 44 is/are rejected.
- 7) ☒ Claim(s) 11, 23 - 26, and 32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

**Note to Applicant:** The Examiner of record for the present application has changed.

Furthermore, new grounds of rejections have been made on claims that have been rewritten on the basis of previous objections (see Non-Final Office Action mailed February 15, 2005).

Because of the new grounds of rejection, this is a Non-Final Office Action.

### *Response to Arguments*

1. Applicant's arguments filed August 18, 2005 have been fully considered but they are not persuasive.
2. Applicant's argues, "Takahashi only discloses evaluating single spectral sensitivities and does not teach or suggest determining an image quality value from the spectral sensitivities of two or more color channels."
3. The Examiner respectfully disagrees with Applicant's position. While Takahashi only discloses individually evaluating single spectral sensitivities; Takahashi, as stated in column 7 (lines 28 – 41), definitely evaluates all the spectral sensitivities including a RED layer spectral sensitivity; a GREEN layer spectral sensitivity; and a BLUE layer spectral sensitivity. Takahashi discloses, as admitted by Applicant (see Amendment page 16, first full paragraph), evaluating spectral sensitivities with the *Q-factor*. The claim language is written broadly such it allows a one-to-one correspondence between image quality and spectral sensitivity as disclosed by Takahashi.

*Claim Objections*

4. **Claims 2 – 5 and 23 – 26** are objected to because of minor typographical errors.
5. **Claims 3, 11, 24, and 32** are objected to because of a lack of clarity and precision.
6. As for **Claims 2 – 5 and 23 – 26**, the claim language recites “*m*-factor” therein, which is a typographical error. The error should be corrected to recite “ $\mu$ -factor”. **Appropriate correction is required.**
7. As for **Claim 3**, the following recitation lacks clarity and precision: “wherein the determining an image quality value is based on a relationship between the determined *m*-factor and the at least one other quality factor, the image quality value being a substantial average of a minimum and a maximum value for the quality factor associated with the determined *m*-factor.” The Examiner recommends the following language: “wherein determining the image quality value is based on a relationship between the determined  $\mu$ -factor and the at least one other quality factor, the image quality value being a substantial average of a minimum and a maximum value for the at least one other quality factor associated with the determined  $\mu$ -factor.” **Appropriate correction is required.**
8. As for **Claim 11**, the following recitation lacks clarity and precision: “wherein the evaluating further comprises comparing the image quality values of two or more of the color imaging devices against each other.” The Examiner recommends the following language: “wherein the evaluating further comprises comparing the image quality value of the color imaging device against respective image quality values for two or more other color imaging devices.” **Appropriate correction is required.**

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9. As for **Claim 24**, the following recitation lacks clarity and precision: “wherein the image quality processing system determines an image quality value based on a relationship between the determined *m*-factor and the at least one other quality factor, the image quality value being a substantial average of a minimum and a maximum value for the quality factor associated with the determined *m*-factor.” The Examiner recommends the following language: “wherein the image quality processing system determines the image quality value based on a relationship between the determined  $\mu$ -factor and the at least one other quality factor, the image quality value being a substantial average of a minimum and a maximum value for the at least one other quality factor associated with the determined  $\mu$ -factor.” **Appropriate correction is required.**

10. As for **Claim 32**, the following recitation lacks clarity and precision: “wherein the evaluation system further comprises comparing the image quality values of two or more of the color imaging devices against each other.” The Examiner recommends the following language: “wherein the evaluation system further comprises comparing the image quality value of the color imaging device against respective image quality values for two or more other color imaging devices.” **Appropriate correction is required.**

***Claim Rejections - 35 USC § 112***

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. **Claims 1 – 5 and 7 – 10** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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13. For **independent Claim 1**, the claim language first recites “determining an image quality value ... from the spectral sensitivity curves,” then recites, “wherein determining an image quality further comprises determining a Universal Measure of Goodness factor based on the obtained spectral sensitivity curves, wherein the determining an image quality value is based on the Universal Measure Goodness factor and at least one other quality factor.” The above-recitation fails to particularly point out and distinctly claims steps required for determining the image quality value. To particularly point out and distinctly claim the subject matter, Claim 1 should distinguish that determining the image quality value initially require that the Universal Measure of Goodness factor be determined and secondly require that the image quality value is based upon the initially determined Universal Measure of Goodness factor and at least one other quality factor.

14. For **independent Claims 3 – 5**, the claim language first recites “determining an image quality value ... from the spectral sensitivity curves,” then recites, “wherein determining an image quality further comprises determining a  $\mu$ -factor based on the obtained spectral sensitivity curves, wherein the determining an image quality value is based on the  $\mu$ -factor and at least one other quality factor.” The above-recitation fails to particularly point out and distinctly claims steps required for determining the image quality value. To particularly point out and distinctly claim the subject matter, the respective claims should distinguish that determining the image quality value initially require that the  $\mu$ -factor be determined and secondly require that the image quality value is based upon the initially determined  $\mu$ -factor and at least one other quality factor.

***Claim Rejections - 35 USC § 102***

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. **Claims 43 and 44** are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi et al. The Examiner's response above is fully incorporated into these rejections.

17. For **Claims 43 and 44**, Takahashi et al. disclose, as shown in figures 3 and 4 and as stated in column 7 (lines 28 – 41), a method for determining a color rendering capability of at least one color imaging device (scanner 101) with multiple color channels (R, G, and B) and a corresponding imaging device analyzing system (see figure 4), the method/imaging device comprising:

obtaining (a source for) spectral sensitivity curves (102 – see figures 3 and 4) for two or more of the multiple color channels in the color imaging device (Spectral Sensitivity curves are obtained in section 102 for R, G, and B); and

determining an image quality value (*q-factor*) for the color imaging device from the spectral sensitivity curves for the two or more of the multiple color channels in the color imaging device (column 7, lines 28 – 41 describes the use of the *q-factor*).

***Allowable Subject Matter***

18. **Claims 22 and 28 – 31** are allowed.

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19. **Claims 11, 23 – 26, and 32** are objected to (see above), but would be allowable if rewritten to overcome the objections.

20. The following is a statement of reasons for the indication of allowable subject matter:

The **closest prior art discloses** a method and a corresponding apparatus for determining a color rendering capability of at least one color imaging device with multiple color channels, wherein determining said capability at least includes: (a) obtaining spectral sensitivity curves for two or more of said color channels; (b) determining an image quality value for the color imaging device based on said obtained spectral sensitivity curves; and (c) evaluating the color rendering capability of the color imaging device based on the determined image quality value.

However, the **closest prior art does not teach or fairly suggest** wherein determining the image quality value further includes **ONE** of the following: (d) first determining a Universal Measure of Goodness factor and determining the image quality value based on the determined Universal Measure of Goodness factor and at least one other quality factor; (e) first determining a  $\mu$ -factor and determining the image quality value based on the determined  $\mu$ -factor and at least one other quality factor, wherein the image quality value is based on a relationship between the determined  $\mu$ -factor and the at least one other quality factor such that the image quality value is a substantial average of a minimum and a maximum value of the at least one other quality factor associated with the determined  $\mu$ -factor; (f) first determining a  $\mu$ -factor and determining the image quality value based on the determined  $\mu$ -factor and at least one other quality factor, wherein the at least one other quality factor is a delta E factor; and (g) first determining a  $\mu$ -factor and determining the image quality value based on the determined  $\mu$ -factor and at least one

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other quality factor, wherein the at least one other quality factor is a color difference metric value.

Additionally, the **closest prior art also does not teach or fairly suggest** wherein the evaluating further comprises wherein the evaluating further comprises comparing the image quality value of the color imaging device against respective image quality values for two or more other color imaging devices.

#### ***Cited Prior Art***

21. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure:

- ***US 6 331 899 B1, US 5 857 063, and US 5 609 978*** each disclose a method and apparatus for optimizing color space outputs for various devices according to CIE XYZ, CIELAB, and CIELUV color metrics.

#### ***Conclusion***

22. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Justin P Misleh whose telephone number is 571.272.7313. The Examiner can normally be reached on Monday through Friday from 8:00 AM to 5:00 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Ngoc Yen Vu can be reached on 571.272.7320. The fax phone number for the organization where this application or proceeding is assigned is 571.273.3000.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JPM

November 2, 2005



NGOC-YEN WU  
PRIMARY EXAMINER